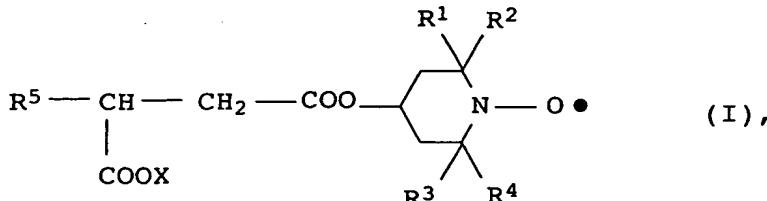


Amended claims:

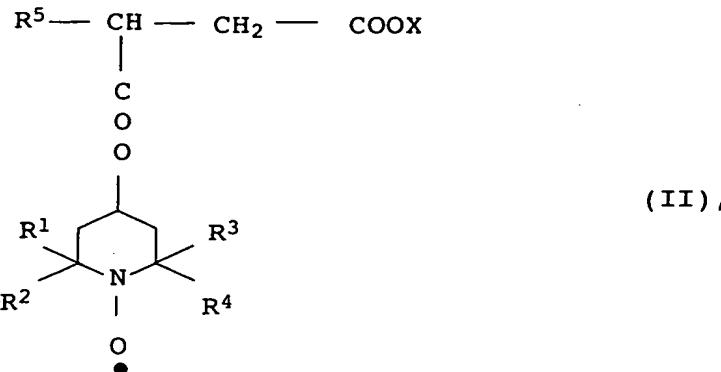
1. A process for the chemical and/or physical treatment of a mixture which contains at least one chemical compound having at least one ethylenically unsaturated group, which is carried out in the presence of at least one compound of the formulae (I) and (II)

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where X is H, an alkali metal and/or ammonium, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, independently of one another, are each C<sub>1</sub>- to C<sub>4</sub>-alkyl and R<sup>5</sup> is C<sub>8</sub>- to C<sub>30</sub>-alkyl.

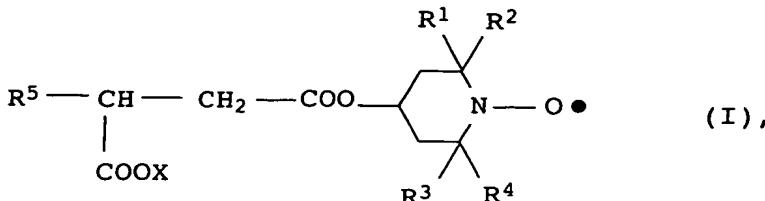
2. A process as claimed in claim 1, wherein the at least one chemical compound having at least one ethylenically unsaturated group is acrylic acid, methacrylic acid, acrylonitrile, methacrylonitrile, styrene, an ester of acrylic acid and/or an ester of methacrylic acid.
3. A process as claimed in claim 1 or 2, wherein the mixture to be treated is a mixture containing, as components, (meth)acrylic acid and an organic liquid having a higher boiling point than (meth)acrylic acid.

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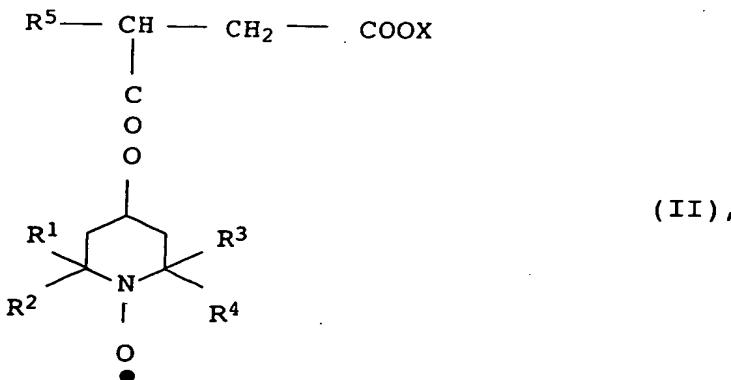
- ~~4. A process as claimed in any of claims 1 to 3, wherein the mixture to be treated comprises  $\geq 95\%$  by weight of (meth)acrylic acid.~~
- ~~5. A process as claimed in any of claims 1 to 4, which is a rectification, extraction or absorption process.~~
- ~~6. A process as claimed in any of claims 1 to 5, wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> are either all methyl or all ethyl.~~
- ~~10 7. A process as claimed in any of claims 1 to 6, wherein X is H.~~
- ~~8. A process as claimed in any of claims 1 to 7, which is carried out at from 100 to 200°C.~~
- ~~15 9. A process as claimed in any of claims 1 to 8, which is carried out at  $\leq 100$  mbar.~~
- ~~10. A mixture which contains at least one chemical compound having at least one ethylenically unsaturated group and at least one compound of the formulae (I) and (II)~~

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where X is H, an alkali metal and/or ammonium,  
R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, independently of one another, are each  
C<sub>1</sub>- to C<sub>4</sub>-alkyl and  
R<sup>5</sup> is C<sub>8</sub>- to C<sub>30</sub>-alkyl.

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11. A mixture as claimed in claim 10, in which the at least one chemical compound having at least one ethylenically unsaturated group is selected from the group consisting of acrylic acid, methacrylic acid, acrylonitrile, methacrylonitrile, styrene, esters of acrylic acid and esters of methacrylic acid.
- 10 12. ~~A mixture as claimed in claim 10 or 11, wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> are either all methyl or all ethyl.~~
- 15 13. A process for the chemical and/or physical treatment of a mixture which contains at least one chemical compound having at least one ethylenically unsaturated group, which is carried out in the presence of at least one compound which is obtainable by reacting an alkylsuccinic anhydride having a number average molar mass (M<sub>n</sub>) of from 212 to about 1400 with 4-hydroxy-2,2,6,6-tetramethylpiperidin-N-onyl.

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